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Educational Survey to Determine Reading Disabilities.

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Under an ESEA/Title III Planning Grant, a survey of 11,311 students in grades 4 through 7 in 12 rural central Georgia school systems was undertaken to identify reading disability. Results indicated that approximately one-fourth of these students was reading more than 1 years below their expectancy levels as determined by a recognized formula. An experimental remedial program was conducted with 26 of the severely disabled readers. Average gains as determined by standardized tests for the 24 children who completed the 9-month program were significant. Average growth rates in reading were approximately twice those for previous school years. This experimental program will be expanded into full-scale preventative and remedial programs. (BS)

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Educational Survey to Determine Reading Disabilities

Research Reports: Diagnosis and Disability
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On May 1, 1966, an ESEA Title III Planning Grant was awarded to the Washington County Board of Education in Sandersville, Georgia. The grant was entitled, "Developing a Pilot Reading Program." Twelve school systems, through an organized advisory board, participated in the project planning and research.

The Survey

A reading survey encompassing these twelve school systems was made to determine the extent of reading disabilities of children in grades four through seven in this rural central Georgia area. Pertinent information on 11,311 children in the area was coded by grades within schools. A formula taken from page 77 of the 1957 edition of Reading Difficulties: Their Diagnosis and Correction, written by

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Guy L. Bond and Miles A. Tinker, was used to determine reading expectancy levels. The results of this formula, IQ times the number of years in school plus one, were subtracted from adjusted reading achievement scores. Reading achievement was measured by standardized tests. The tests used were the tests regularly administered by the system and, therefore, differed in the various systems. The results indicated the number of years each student was disabled or abled in reading.

All tests were administered during the school year 1965-66 and the fall of 1966. All coding was done during the summer and the fall of 1966. Years in school was tallied as whole numbers; however, testing was done at different intervals of the year. The adjustment in achievement was, therefore, necessary. A ratio and proportion formula was used to arrive at an adjusted achievement for each student. The adjustment was made using the formula: years in school at the time of the test (to the nearest tenths) was to the score earned on the test, as the number years completed in school was to X. For example, if a student completing his fourth year in school in June of 1966 was given the achievement test when he had been in school 3.8 years, and the achievement score was 4.2, the formula would then state:

$$3.8 : 4.2 = 4.0 : X$$
$$3.8X = 16.8$$
$$X = 4.4$$

4.4 = Adjusted Achievement Score

All achievement scores were adjusted by a computer in this manner. Since pacing not only varied from student to student, but from time to time for the

same students, the adjustment in achievement is recognized as a limitation of this research study.

Tests Administered

In nine systems the California Achievement Tests were administered, while in the other systems either Metropolitan Achievement, Stanford Achievement, or Iowa Basic Reading Achievement tests were given. IQ scores were obtained from California Short-Form Test of Mental Maturity in ten systems; Otis Quick Scoring Mental Ability Tests and the Harmon-Nelson Tests of Mental Ability were used in the two other systems.

Results of the Survey

Due to differences in tests administered, data were handled separately for each system. Educators viewed only the results of the study for their own systems. It was never a purpose of this research to compare systems; therefore, the results for this research study have been combined and are thus being presented as a single study.

According to the survey 7,940 of the children (approximately two-thirds) were disabled readers; 2,823 (approximately one-fourth) were disabled by more than one and one-half years. All fourth grade students whose disabilities were greater than one year and five months, fifth grade students whose disabilities were greater than one year and seven months, and sixth and seventh grade children whose disabilities were greater than two years were listed separately by schools. Table I, page 4, gives the complete results from all systems.

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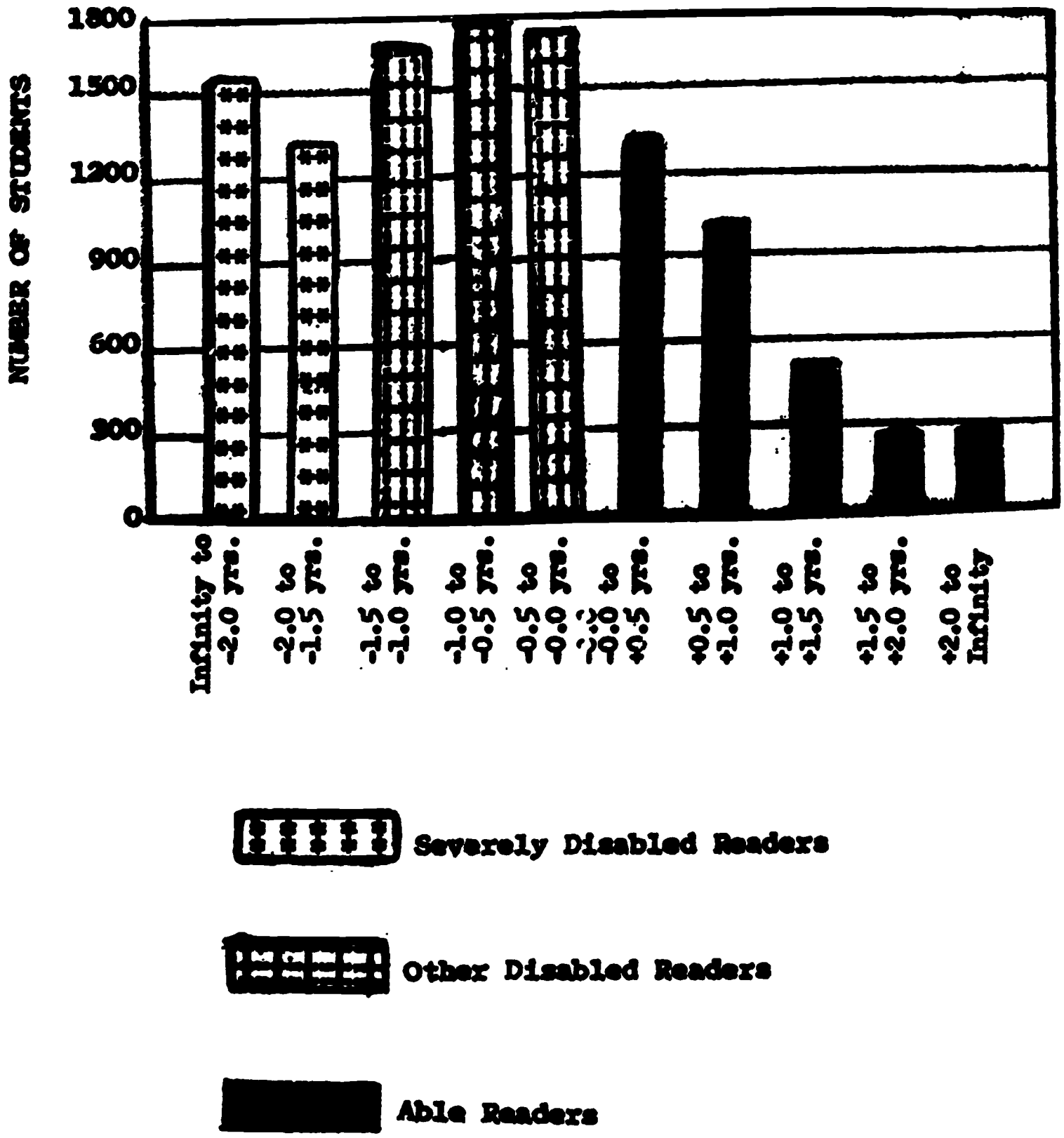
TABLE I

SUMMARY GRAPH OF EDUCATIONAL SURVEY



Limitations of the Research

In addition to the adjusted achievements, other limitations were noted. Among these were the use of group intelligence tests, the fact that tests were administered by different persons, and the distortion of expectancy levels for students below and above the normal range of intelligence.

Comparison with National Norms

The average adjusted reading achievement of the children in grade four (4.9) was found to be 3.6 or one year and three months below the national norm. Reading achievement in grade five (5.9) was 4.5 or one year and four months below the national norm. Children's average reading achievement in grade six (6.9) was 5.1 or one year and eight months below the national norm. In grade seven (7.9) the average reading achievement was 5.8 or two years and one month below the norm for the nation. The comparisons with national norms were in relation to the average adjusted reading achievement scores.

Program Planned

As project personnel, the Advisory Board, administrators, and curriculum directors studied the results of the survey, answers were sought as to what could be done to improve the reading ability of these children and other children with similar problems. Although a preventive program was desired, it was evident that some treatment must be given for those students who were severely disabled readers. Therefore, along with concentrated planning toward in-service programs, an experimental study was undertaken with twenty-six disabled readers.

Selection of Participants

Criteria for selection of the students to participate in the study were threefold.

1. They were enrolled in grades four through seven in the school chosen as the demonstration school.
2. Students of grade four were identified as being disabled by more than one year and five months; students in grade five by more than one year and seven months; and students in grades six and seven by more than two years.
3. All students were identified as possessing "average" or "above average" intellectual abilities. Average or above average is used to mean IQ's of children that have been measured as being 90 or above.

Classroom teachers were informed of the selected population according to the data available from the Educational Survey. They were asked to submit the names of other students they believed would also belong to the selected population. All students selected were administered the reading section of the Stanford Achievement Test for additional evaluation. Twenty-six students were thus chosen as belonging to the identified population. The second achievement tests administered were used as the pretests for the study.

Remedial Instruction

From September 14, 1966, to May 23, 1967, between the pretests and post-tests, these students received remedial instruction for thirty minutes to one hour for three days per week. Teaching groups ranged in size from one to eight. The number of children most frequently taught in one group was five.

A variety of diagnostic tests were administered. The types of tests used were dependent upon the types of problems noted. In general, an informal

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interview was the first step of the diagnosis. This was usually followed by an Informal Reading Inventory. If the students were believed to be reading at, or below, the third grade level, a list of Dolch Service Words preceded the Informal Reading Inventory to assess sight vocabulary. Using this data and the data collected from permanent records and conferring with past teachers, clinicians decided which other tests, if any, should be administered. Wechsler Intelligence Scale for Children, Gray Oral Reading Test, Durrell Analysis of Reading Difficulty, Spache Diagnostic Reading Scales, Gates Reading Survey, and/or Iowa Work-Study Skills were among the most used testing instruments. A Keystone Visual Survey Telebinocular was used to screen vision.

Programs for each student were dependent upon unique needs and interests. Diagnosis was continuous as weaknesses and strengths were noted at each session. The special reading teacher capitalized upon individual needs as she made daily plans for each student. Each child's program was dynamic, comprehensive, pragmatic, varied, individualistic, creative, and flexible. Attention was continuously given to motivation. While challenging experiences were provided, all students experienced success. It was realized that the twenty-six students participating in the study had met with failure. Project philosophy was that continued failure resulted in more failure, while an adequate amount of success resulted in more success.

The special help given each student did not replace the child's regular reading program. It was provided as an extra service in addition to the regular classroom instruction.

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Results of the Remedial Program

Subjectively, it was determined that the most positive effect of this aspect of the research was positive changes in attitudes. Objectively, it was determined that gains made were greater than those made by these students in any other nine-month period. The criteria for evaluating each student's progress were in terms of his prior learning rate as compared to his learning rate during the experimental study.

Case Number One, a fourth grade student, had been retained in one grade and, therefore, had been in school for four years when he was given the pretest. The grade score earned on the pretest was 3.0. Since this represents two years of achievement (a child beginning first grade is considered at 1.0), he had accomplished 50 per cent of the achievement expected for the "average" child after four years of schooling. It can be noted that there were eight months and nine days between the dates of the pretest and posttest. The time, however, has been calculated as though it had been nine months. Case Number One showed a gain of nine months between the two testing dates. If the time is considered to be nine months, the efficiency rate of achievement was 100 per cent. The method used for comparing growth rates was devised by the investigators. The results are to be viewed as gross interpretations.

One student moved away before the posttests were administered. Another was dropped because of a scheduling problem. Table II on page 9 summarizes the results of the study for each of the twenty-four students remaining in the program at the end of the study.

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TABLE II

SUMMARY OF DATA OBTAINED FROM EXPERIMENTAL STUDY

Case No.	Grade	Yrs. in Sch.*	Sex	Pretest 9-14-66	Posttest 5-23-67	Growth in Years	Growth Rate Prior to 9-14-66	Growth Rate During Experiment
1	4	4	M	3.0	3.9	.9	50%	100%
2	4	3	M	2.8	4.0	1.2	60%	133%
3	4	3	M	2.8	3.6	.8	60%	89%
4	4	4	M	2.2	2.5	.3	30%	33%
5	4	3	M	2.3	4.0	1.7	43%	189%
6	4	4	M	3.1	4.6	1.5	53%	167%
7	4	4	M	2.4	3.5	1.1	35%	122%
8	5	4	M	2.9	4.0	1.1	48%	122%
9	5	4	M	3.2	4.4	1.2	55%	133%
10	5	5	M	2.6	3.3	.7	32%	78%
11	5	5	F	3.6	4.5	.9	52%	100%
12	5	5	M	3.7	3.7	0	54%	0%
13	5	5	M	2.7	3.7	1.0	34%	111%
14	6	6	M	4.7	5.6	.9	62%	100%
15	6	5	F	4.3	5.9	1.6	66%	178%
16	6	6	M	4.1	4.1	0	52%	0%
17	6	6	M	3.6	4.3	.7	43%	88%
18	6	5	M	4.1	4.8	.7	62%	88%
19	6	6	M	3.8	5.2	1.4	47%	175%
20	6	6	F	3.7	3.2	-.5	45%	-56%
21	7	6	F	4.9	6.3	1.4	65%	156%
22	7	7	F	6.3	7.2	.9	76%	100%
23	7	7	F	5.9	8.4	2.5	70%	278%
24	7	6	F	5.5	5.8	.3	75%	33%

* Years in school to nearest whole number on pretest date.

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Students listed as Case Numbers Twelve, Sixteen, and Twenty were given pretests that were too difficult in terms of instructional levels; therefore, it is questionable that they were able to read the test adequately. The scores received were largely due to chance. It has been found that students in the lower quartile make higher scores when given tests above their instructional levels than when given tests on their instructional levels. The more difficult the test, the greater the possibility for a higher chance score. Two of the students, Case Numbers Sixteen and Twenty, were given credit for more correct answers on the more difficult items of the test. The other case in point, Case Number Twelve, received credit for approximately the same percentages of correct answers on all sections of all sub-tests. Since within sub-tests the skills measured become increasingly more difficult, the above facts stated would indicate the lack of validity of tests given to these students. According to Informal Reading Inventories, Case Number Twelve achieved three grade levels and Cases Sixteen and Twenty achieved one grade level and one-half grade level respectively. It is now recommended by project personnel that students be given reading achievement tests appropriate for their instructional levels regardless of their grade levels. Such modifications are being made during the operational phase of this special reading program.

The average gain for all students to the nearest whole month in the eight months and nine days between the pretests and posttests was nine months. The average rate of growth prior to September 14, 1966, was 53 per cent; the rate

of growth for the period beginning September 14 and ending May 23 was 105 per cent. If the three students in question are deleted from the study, the results are quite significant. The average gain to the nearest whole month would be eleven months. The average rate of growth prior to September 14, 1966, would be 53 per cent and the rate of growth for the period beginning September 14, 1966, and ending May 23, 1967, would be 122 per cent.

Summary

The survey of 11,311 students in grades four through seven in twelve rural central Georgia school systems revealed that approximately one-fourth of these students were reading more than one and one-half years below their expectancy levels as determined by a recognized formula. An experimental study was undertaken with twenty-six of the students identified as being severely disabled readers. Average gains, as determined by standardized tests, for the twenty-four students who received "special" instruction for approximately nine months were significant. Average growth rates in reading were approximately twice that made in all previous school years.

Following the creation of an awareness of such a need, the outcomes should be the invention of more effective teaching techniques, the demonstration of such techniques, and evidence that the more successful methods are being accepted by, and adapted to, the larger educational community. Certainly the stages of inquiry and invention were realized during the fiscal year 1966-67.

Through an ESEA, Title III Operational Grant the latter stages of development are presently being pursued. The work herein presented was performed pursuant to a Grant from the U.S. Office of Education, Department of Health, Education, and Welfare.